



# **Benefits of Commercial Vehicle Information Systems and Networks (CVISN) Program**

Presented by:

Julie Lane

Federal Motor Carrier Safety Administration

September 2008

# Agenda

- Overview of CVISN Program
- Benefits of CVISN
  - Electronic Credentialing Program Area
  - Electronic Screening Program Area
  - Safety Information Exchange Program Area
- Contact Information
- Questions
- Summary

# CVISN Overview

- CVISN is a nationwide program managed by FMCSA designed to:
  - Improve safety and productivity of motor carriers, commercial vehicles and their drivers
  - Improve efficiency and effectiveness of commercial vehicle safety programs through targeted enforcement
  - Improve commercial vehicle data sharing within states and between states and FMCSA
  - Reduce Federal/State and industry regulatory and administrative costs

# CVISN Overview (continued)

## *Core CVISN Functionality*

### Program Areas

#### Credentials Administration

- Automated processing of IRP and IFTA credentials
- Interstate data exchange and funds transfer via IRP and IFTA Clearinghouses

#### Safety Information Exchange

- Sharing of safety data and supporting credentials data among State agencies
- Interstate data exchange
- Use of ASPEN inspection software

#### Electronic Screening

- Automated weight and credentials screening (at fixed or mobile site)

### CVISN Architecture (Technical Infrastructure)

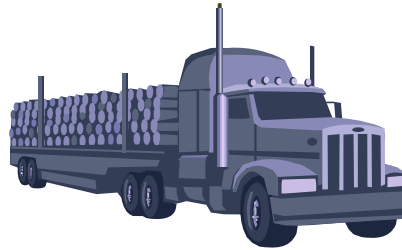
### Mainstreaming and Deployment Planning (Organizational Infrastructure)

# Typical CVO Environment

## *Before CVISN*



**Motor Carrier**

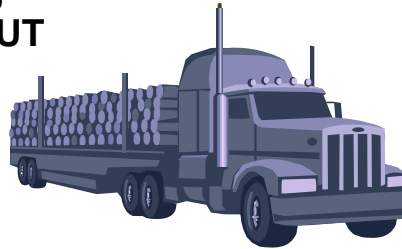


# Typical CVO Environment

## *Before CVISN*



**Motor carrier applies for  
necessary operating  
authority and pays HVUT**

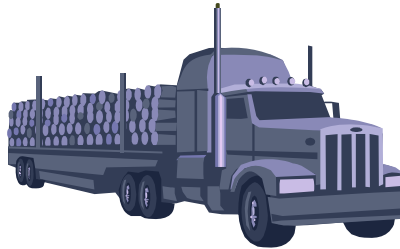
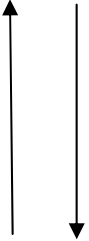


# Typical CVO Environment

## *Before CVISN*

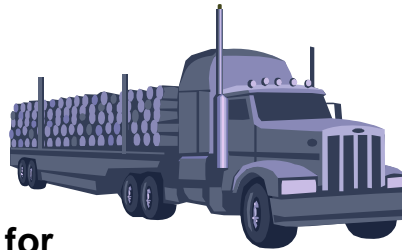
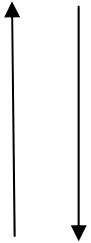


**Agencies review and approve applications and issue appropriate authority or HVUT proof of payment**



# Typical CVO Environment

## *Before CVISN*



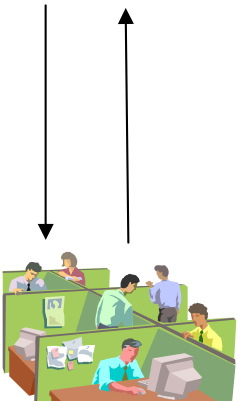
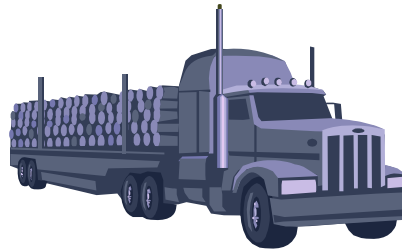
**Motor carrier applies for  
necessary credentials (e.g.,  
registration, fuel tax, over-  
dimensional permit)**





# Typical CVO Environment

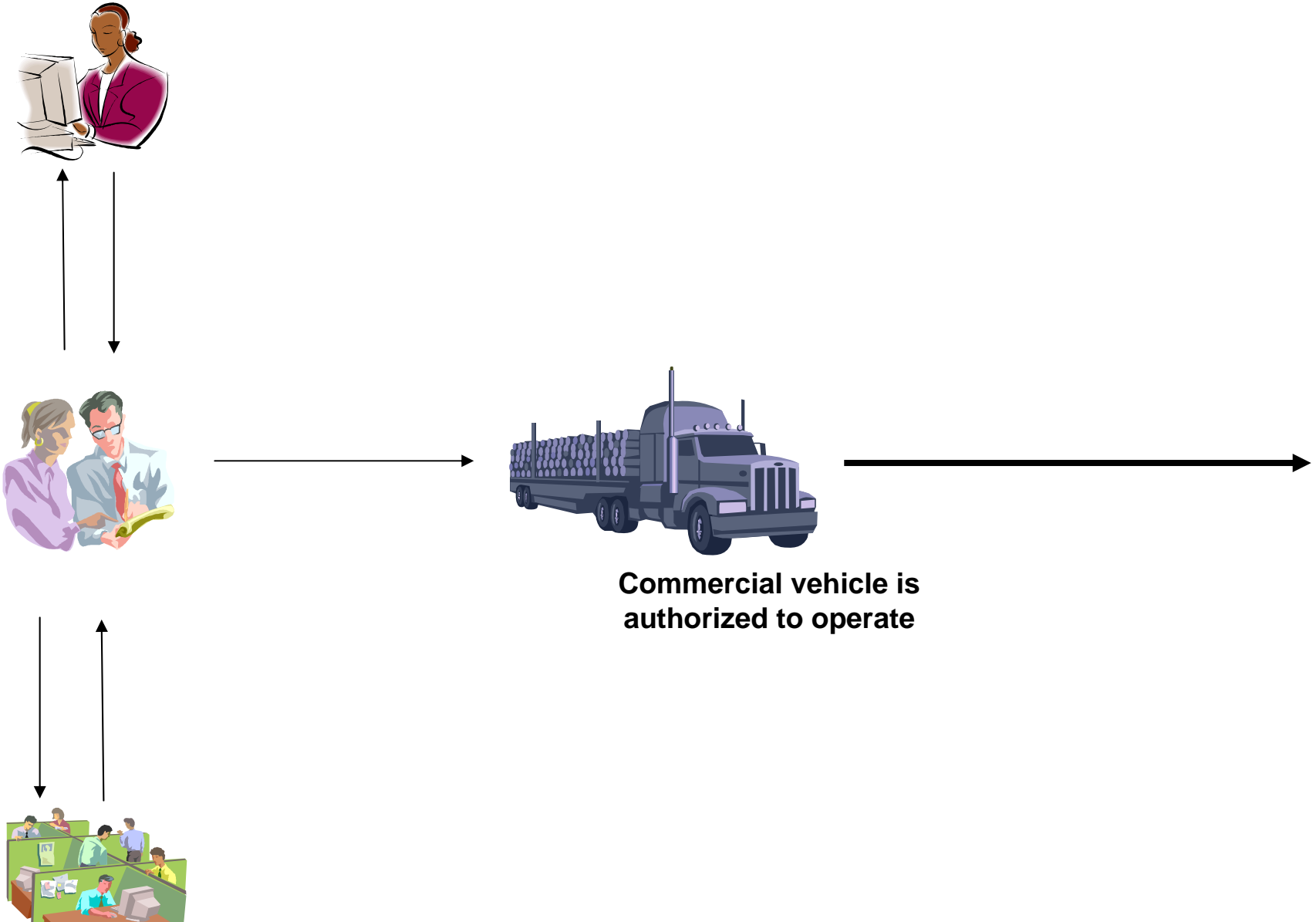
## *Before CVISN*



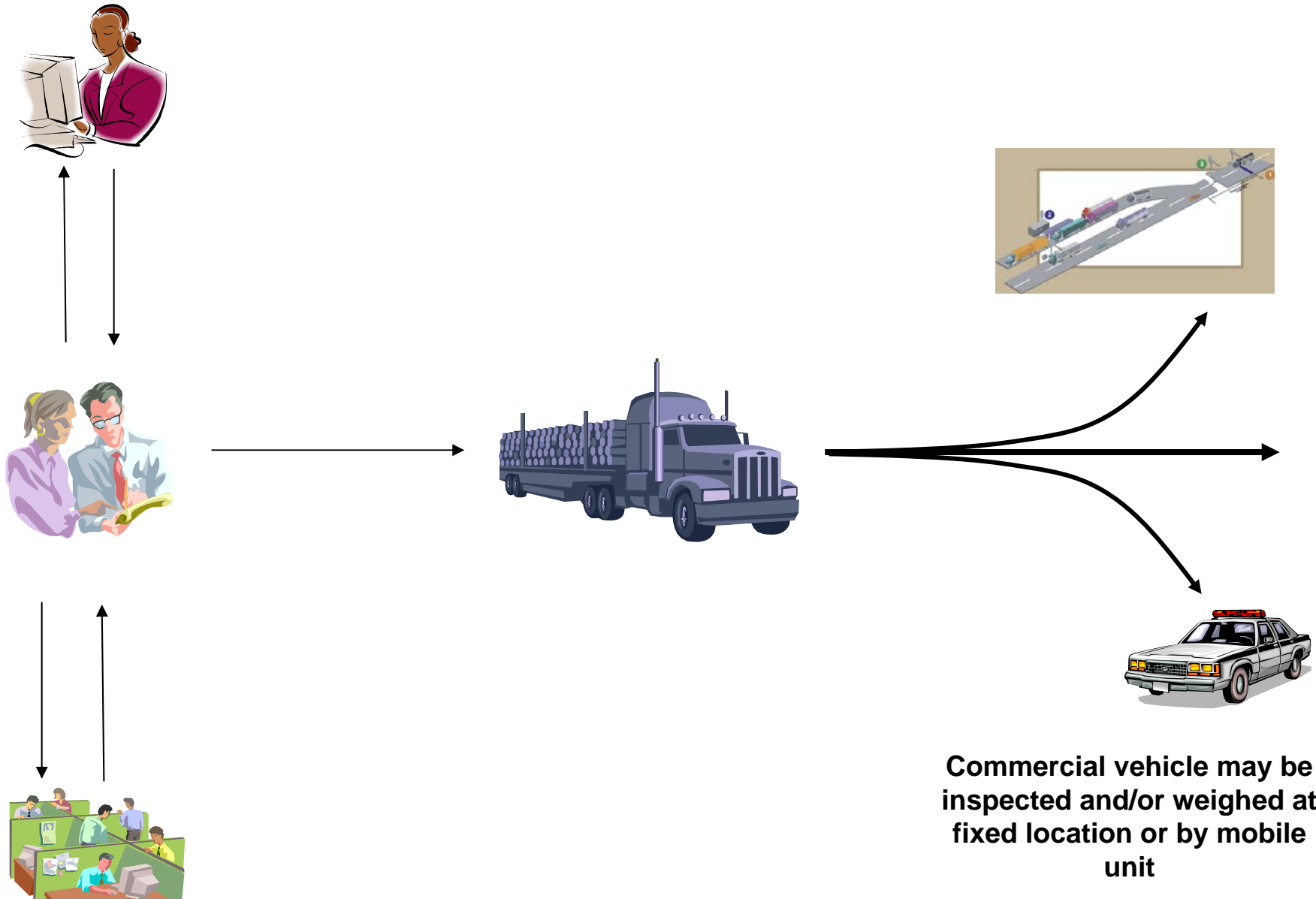
**State agencies review applications and issue appropriate credentials (e.g., registration, fuel tax, over-dimensional permit)**

# Typical CVO Environment

## *Before CVISN*



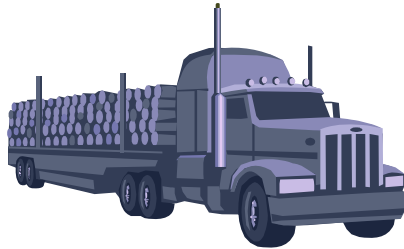
# Typical CVO Environment *Before CVISN*



# Typical CVISN Environment



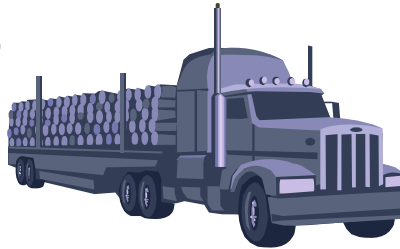
**Motor Carrier**



# Typical CVISN Environment



Motor carrier applies for  
necessary operating  
authority and pays HVUT

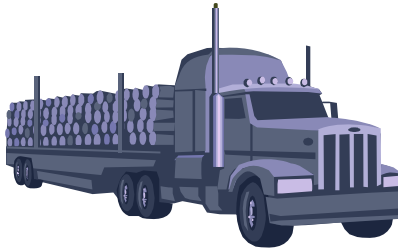


# Typical CVISN Environment

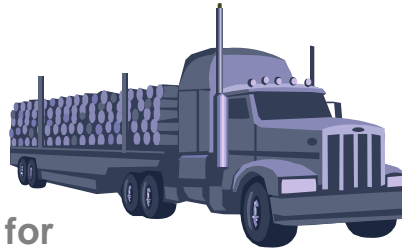
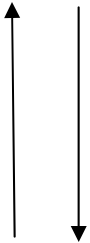


Agencies review and approve applications and issue appropriate authority or HVUT proof of payment

**CVISN is working to augment validation of HVUT**

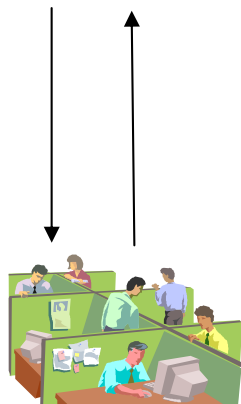
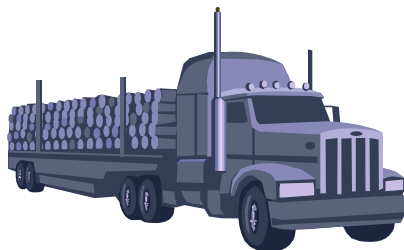
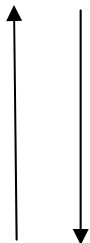


# Typical CVISN Environment



Motor carrier applies for  
necessary credentials (e.g.,  
registration, fuel tax, over-  
dimensional permit)  
**electronically**

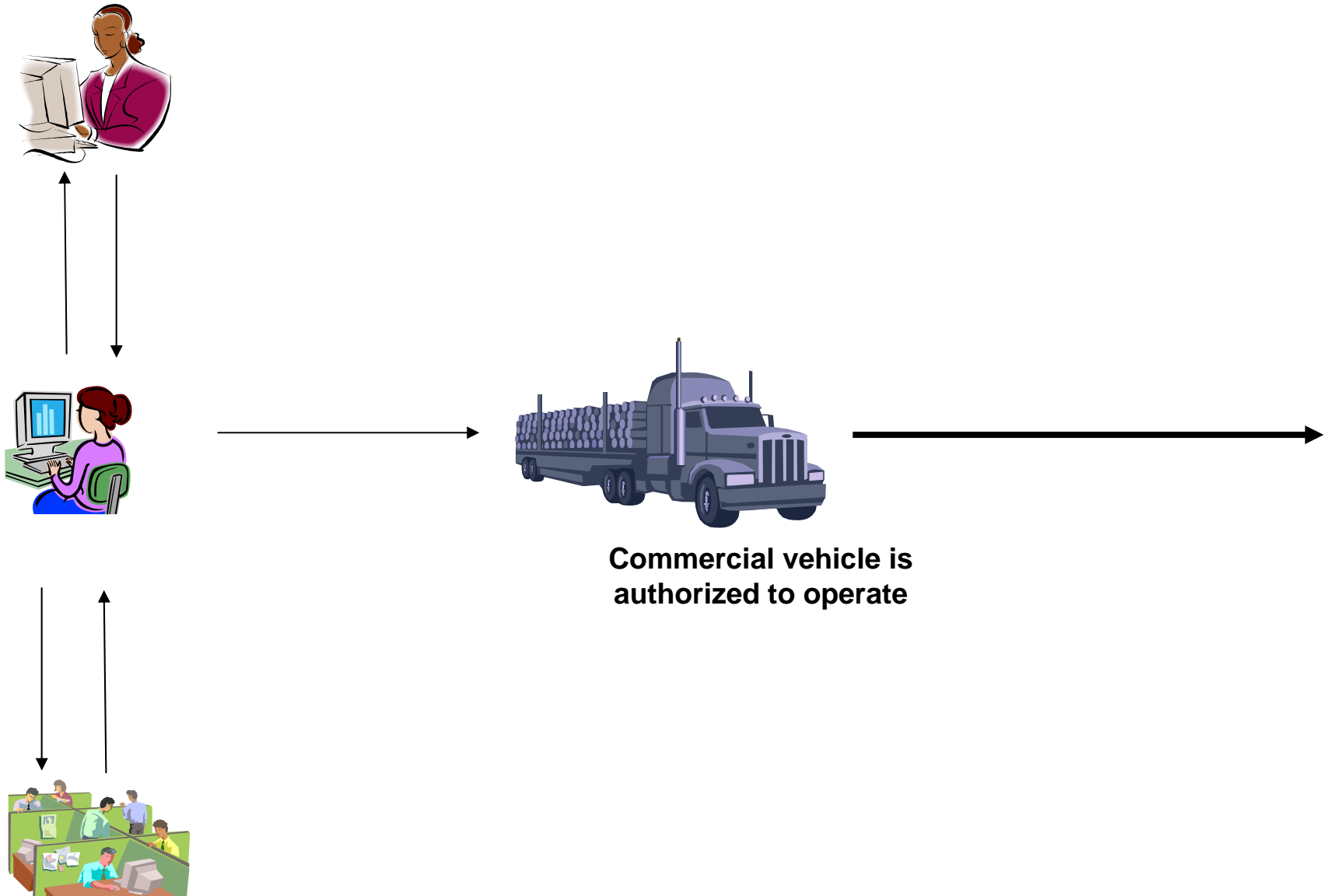
# Typical CVISN Environment



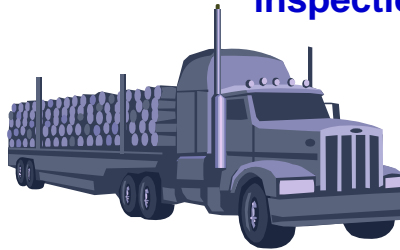
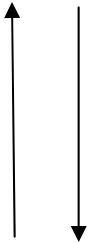
State agencies review applications and issue appropriate credentials (e.g., registration, fuel tax, over-dimensional permit) **electronically**



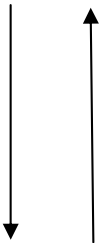
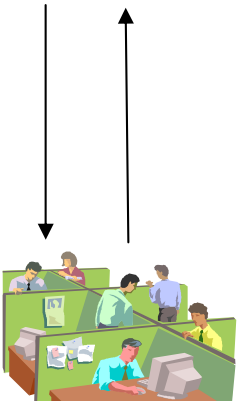
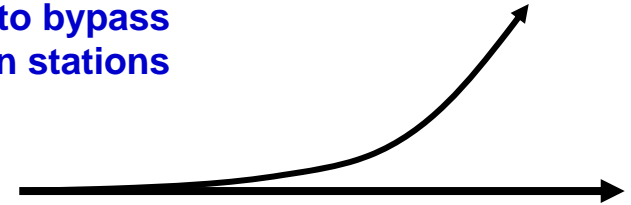
# Typical CVISN Environment



# Typical CVISN Environment



**Electronic screening facilities allow enrolled carriers with good safety histories to bypass inspection stations**

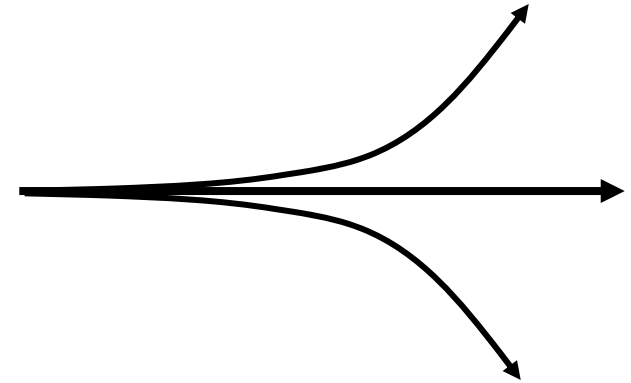
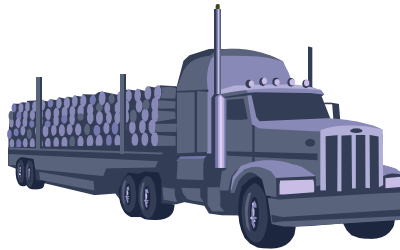
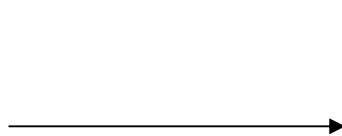
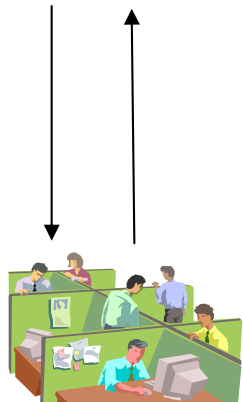


# Typical CVISN Environment

Safety information exchange  
systems allow safety and  
credentials data sharing  
within and across  
jurisdictions



ASPEN inspection software  
validates data and allows for  
uploading to national  
repository to improve  
timeliness



# CVISN Benefits

	<u>Benefit Applies to</u>		<u>Benefit Derived From</u>		
	Carrier	State	SIE	ES	ECA
Targeted enforcement focused on high-risk carriers and vehicles	●	●	●	●	
More effective use of roadside enforcement resources		●	●	●	
Real-time access to online data at fixed inspection facilities and by mobile units	●	●	●	●	
Improved asset tracking and safety/driver management	●		●	●	
Improved access to credential and safety information from other jurisdictions	●	●	●	●	●
More efficient and cost effective processing of credential applications	●	●			●
Improved customer service/Ability to receive select credentials 24X7	●	●			●
Improved accuracy and timeliness in credentials processing	●	●	●		●

# Benefits of CVISN

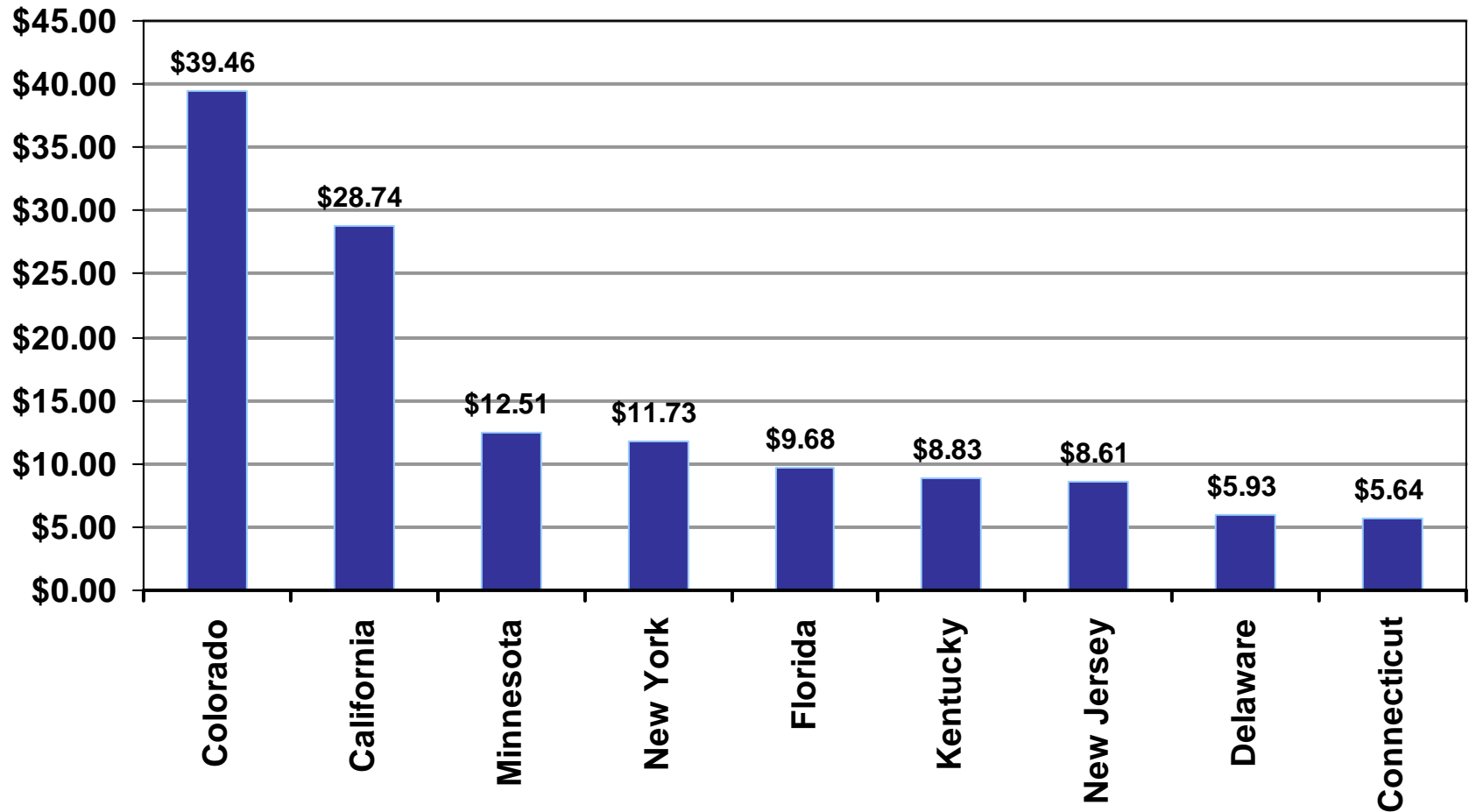
## Electronic Credentialing Program Area

- State benefit
  - State's costs associated with credentialing are reduced
    - Maryland: \$53.51 savings per account for IRP credentialing
    - Kentucky: \$79.83 savings per account for IFTA credentialing

# Benefits of CVISN

## Electronic Credentialing Program Area

**Costs Savings (Per Transaction) By State**



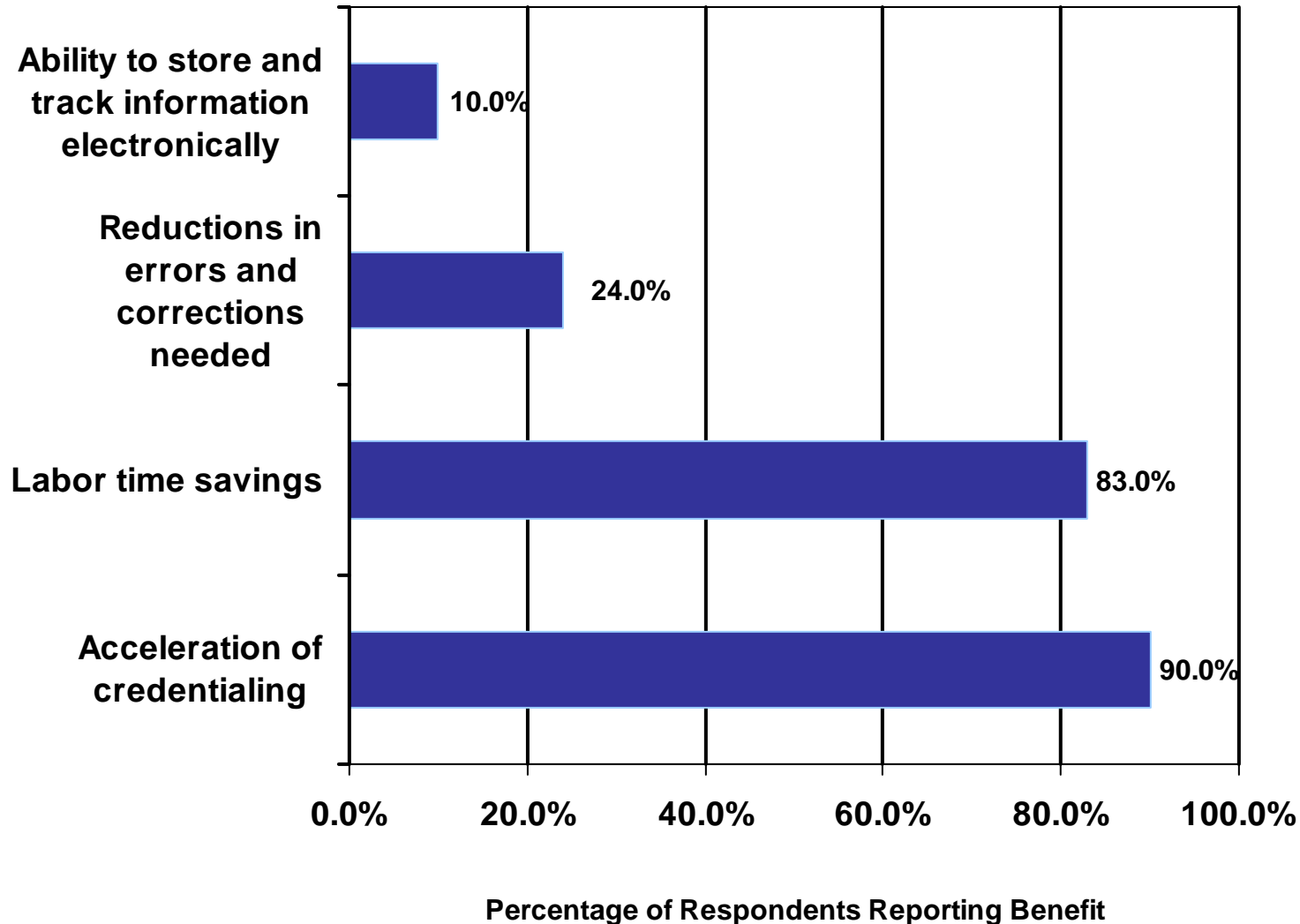
# Benefits of CVISN

## Electronic Credentialing Program Area

- Motor carrier benefits
  - New commercial vehicles can be placed into service 3-4 days sooner as opposed to paper credentialing process
    - More rapid processing saves carrier approximately \$371 per vehicle
  - Electronic credentialing reduces carrier staff time per credentialing transaction by 10-12 minutes
    - Average savings of \$4.13 per transaction
  - Carriers' other costs (e.g., postage) also are reduced by approximately \$1 per transaction
  - Depending on fleet size, savings per carrier could be as high as \$360,500 per year

# Benefits of CVISN

## Electronic Credentialing Program Area (continued)





# Benefits of CVISN

## Electronic Credentialing Program Area (continued)

		Discounted at 4%	Discounted at 7%
Benefits	Operating cost savings to states	\$2,217,117,163	\$1,701,608,736
	Operating cost savings to carriers	\$824,504,998	\$632,796,918
	Inventory cost savings to carriers	\$7,668,944,253	\$5,885,815,490
<b>Total Benefits</b>		<b>\$10,710,566,413</b>	<b>\$8,220,221,144</b>
Costs	One time start-up cost to states	\$47,336,356	\$47,336,356
	Replacement capital costs to states	\$112,232,135	\$82,400,292
	One time start-up cost to carriers	\$447,982,454	\$447,982,454
	Operating costs to carriers	\$3,308,342,914	\$2,539,110,382
<b>Total Costs</b>		<b>\$3,915,893,859</b>	<b>\$3,116,829,485</b>
Total (Net Present Value, \$2006)		\$6,794,672,554	\$5,103,391,660
<b>Benefit/Cost Ratio</b>		<b>2.7</b>	<b>2.6</b>

# Benefits of CVISN

## Electronic Screening Program Area

- State benefits
  - Use of electronic screening systems, weigh-in-motion scales, and selection algorithms allow enforcement resources to be targeted at higher-risk carriers and vehicles

# Benefits of CVISN

## Electronic Screening Program Area (continued)

Vehicle Data	Percentage of High-Risk Carriers			
	<u>Colorado</u>	<u>Kentucky</u>	<u>New York</u>	<u>Ohio</u>
General Truck Traffic	27.35%	29.32%	17.62%	34.93%
Inspected	40.95%	33.94%	18.72%	49.56%
General Truck Traffic vs. Inspected	1.50	1.16	1.06	1.42

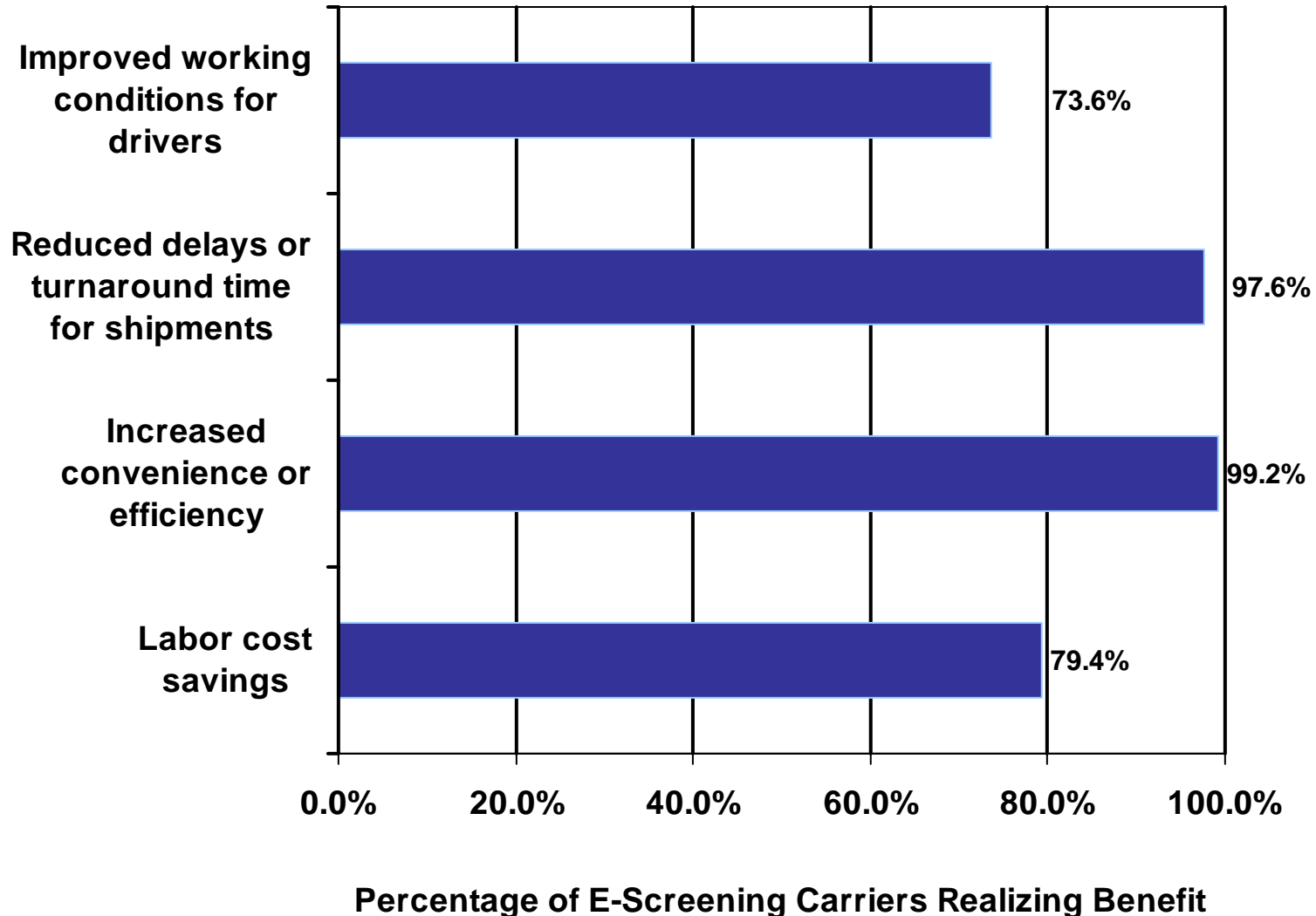
# Benefits of CVISN

## Electronic Screening Program Area (continued)

- Motor carrier benefits
  - Labor Cost Savings
  - Increased Convenience or Efficiency
  - Reduced delays or turnaround time for shipments
  - Improved working conditions for drivers

# Benefits of CVISN

## Electronic Screening Program Area (continued)



# Benefits of CVISN

## Electronic Screening Program Area (continued)

- Motor carrier benefits (continued)
  - Time savings estimated to be 3-5 minutes per bypass
  - Estimated savings per bypass: \$8.68
  - Annual net benefit per transponder-equipped commercial vehicle: \$1,169
  - Total savings per carrier over 10-year analysis: \$3.2 million to \$219.4 million

# **Benefits of CVISN**

## **Electronic Screening Program Area (continued)**

- State and motor carrier benefit
  - Fewer commercial vehicle crashes and fatalities

# Benefits of CVISN

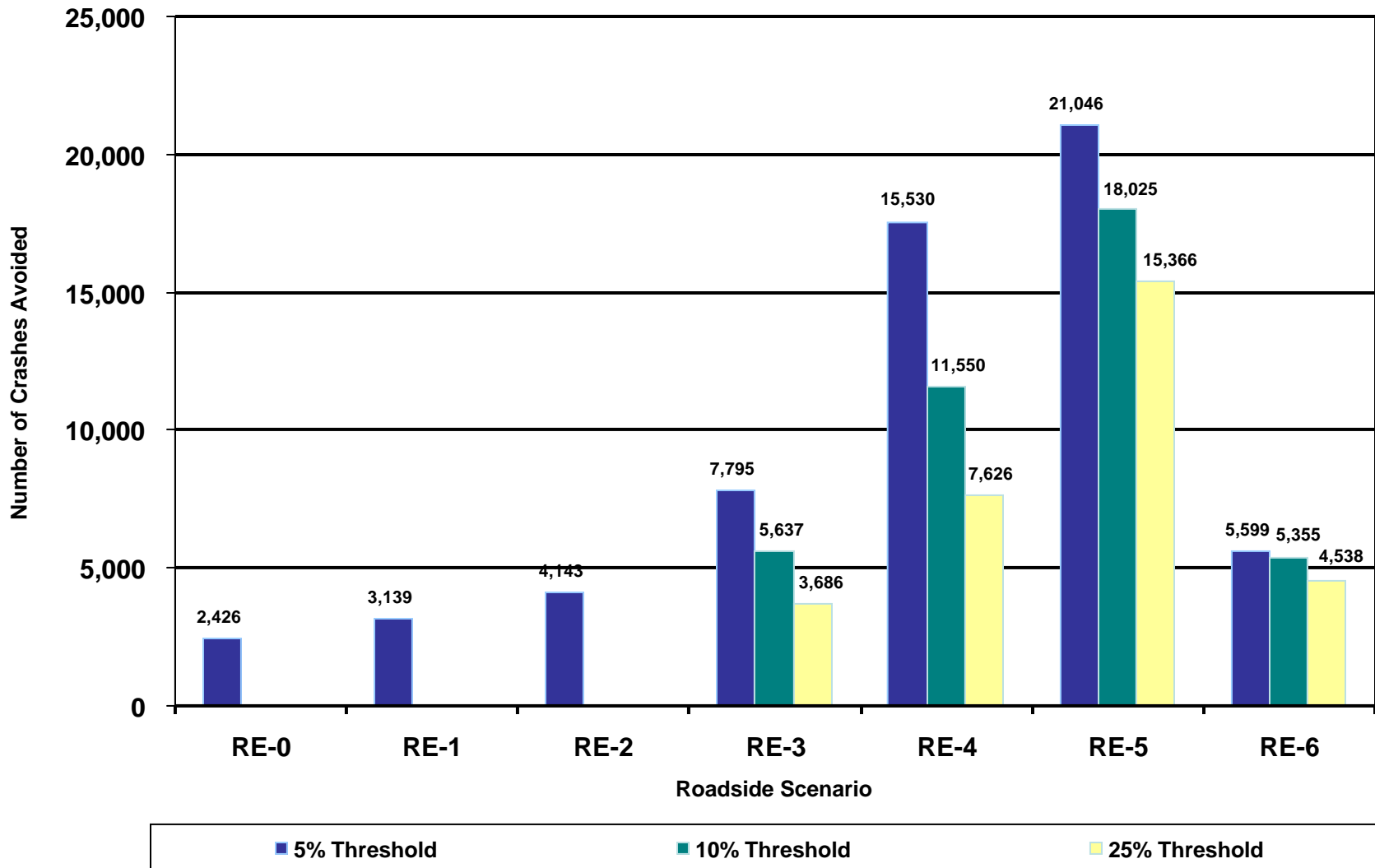
## Electronic Screening Program Area (continued)

- Evaluation compared six different operating scenarios:
  - RE-0, Random selection: Inspectors select commercial vehicles for inspection in a random manner without using personal experience, judgment or any CVISN technologies
  - RE-1, Pre-CVISN Baseline: Inspectors select commercial vehicles for inspection using personal experience and judgment, but without the aid of most CVISN technologies
  - RE-2: Electronic screening based on ISS score
  - RE-3: Electronic screening based on high vehicle and driver OOS rates
  - RE-4: Electronic screening based on high driver OOS and brake violation rates
  - RE-5: Electronic screening based on infrared screening and high driver OOS violation rate
  - RE-6: Electronic screening based on high ISS score



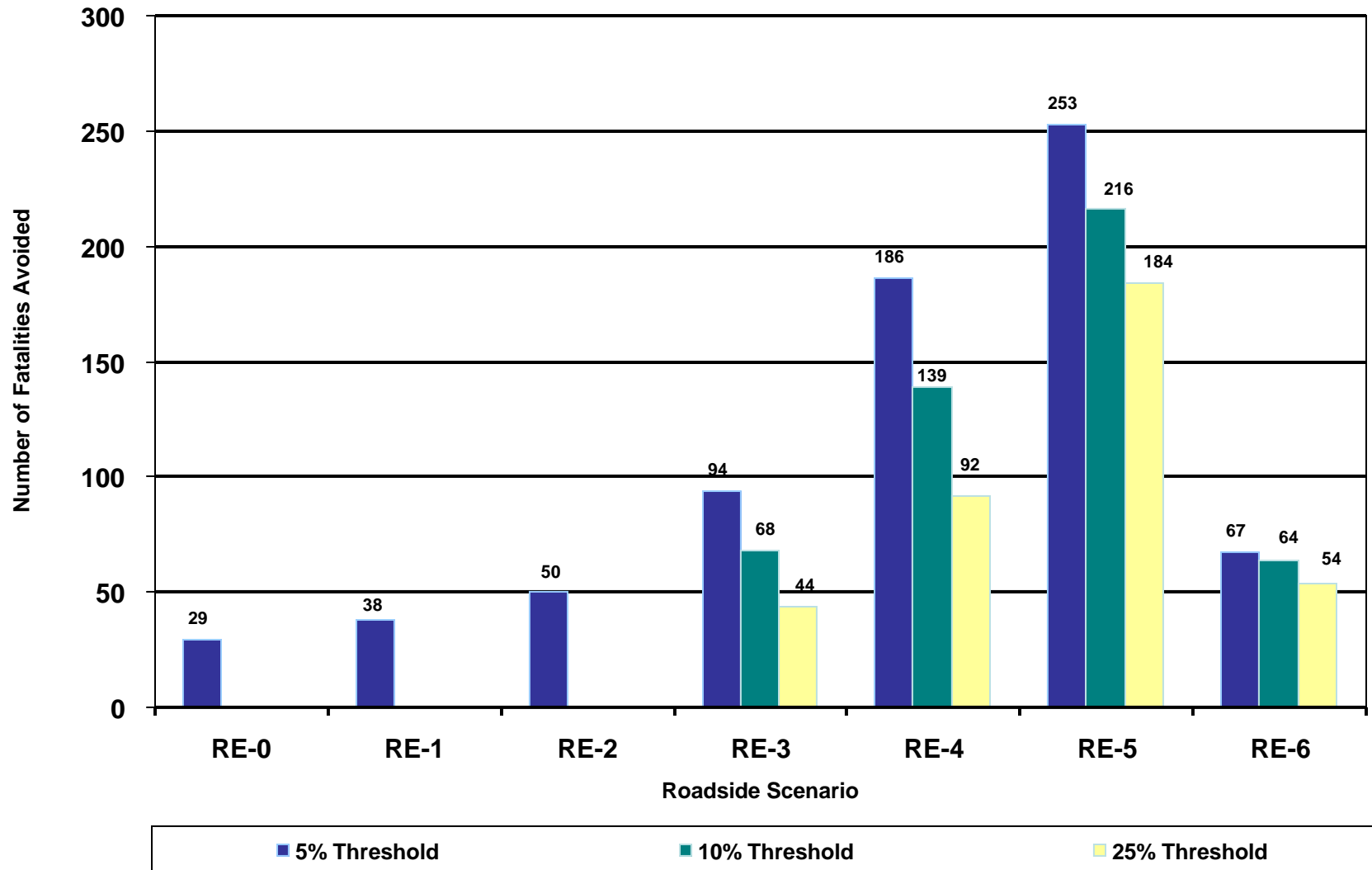
# Benefits of CVISN

## Electronic Screening Program Area (continued)



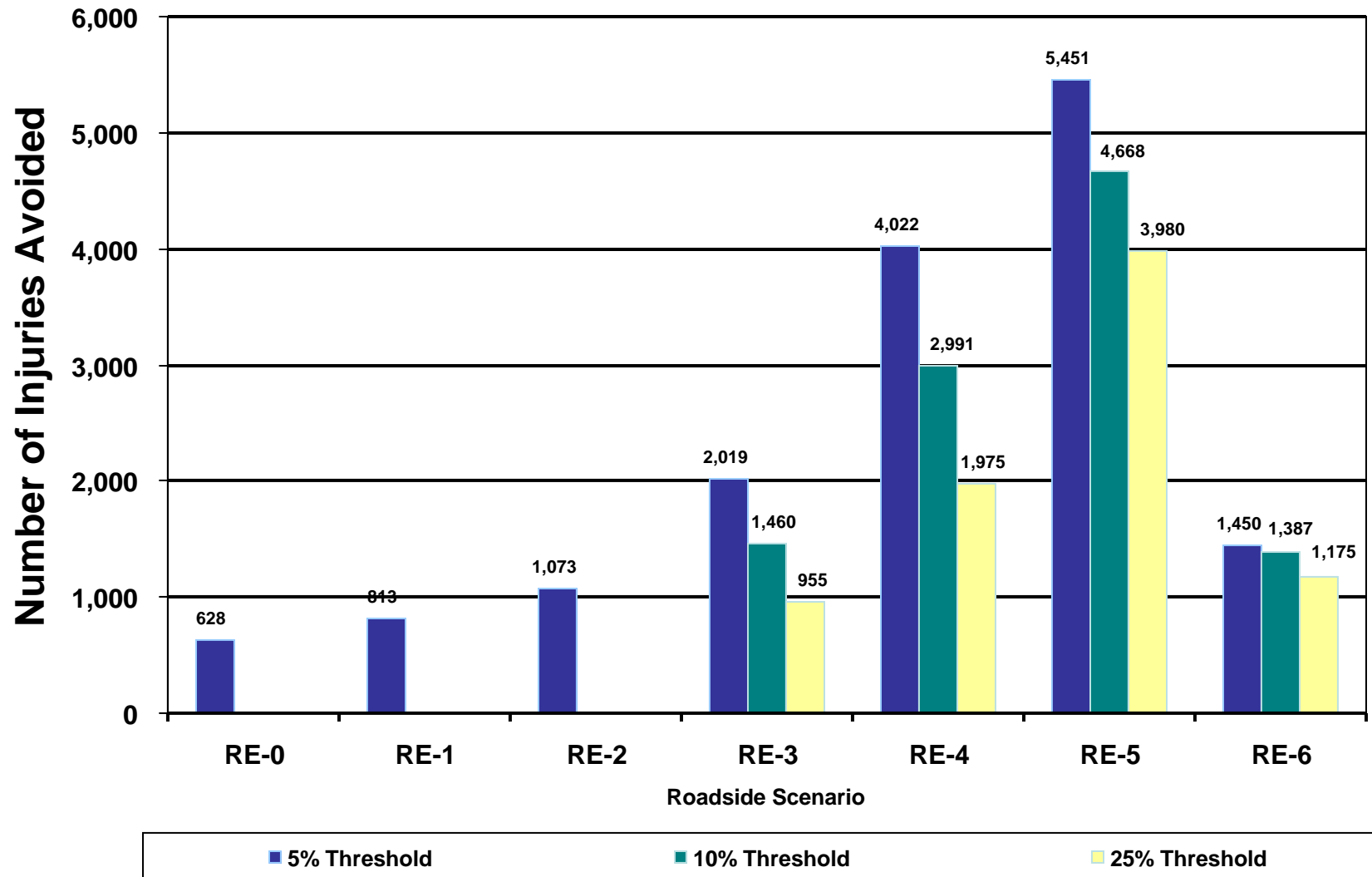
# Benefits of CVISN

## Electronic Screening Program Area (continued)



# Benefits of CVISN

## Electronic Screening Program Area (continued)



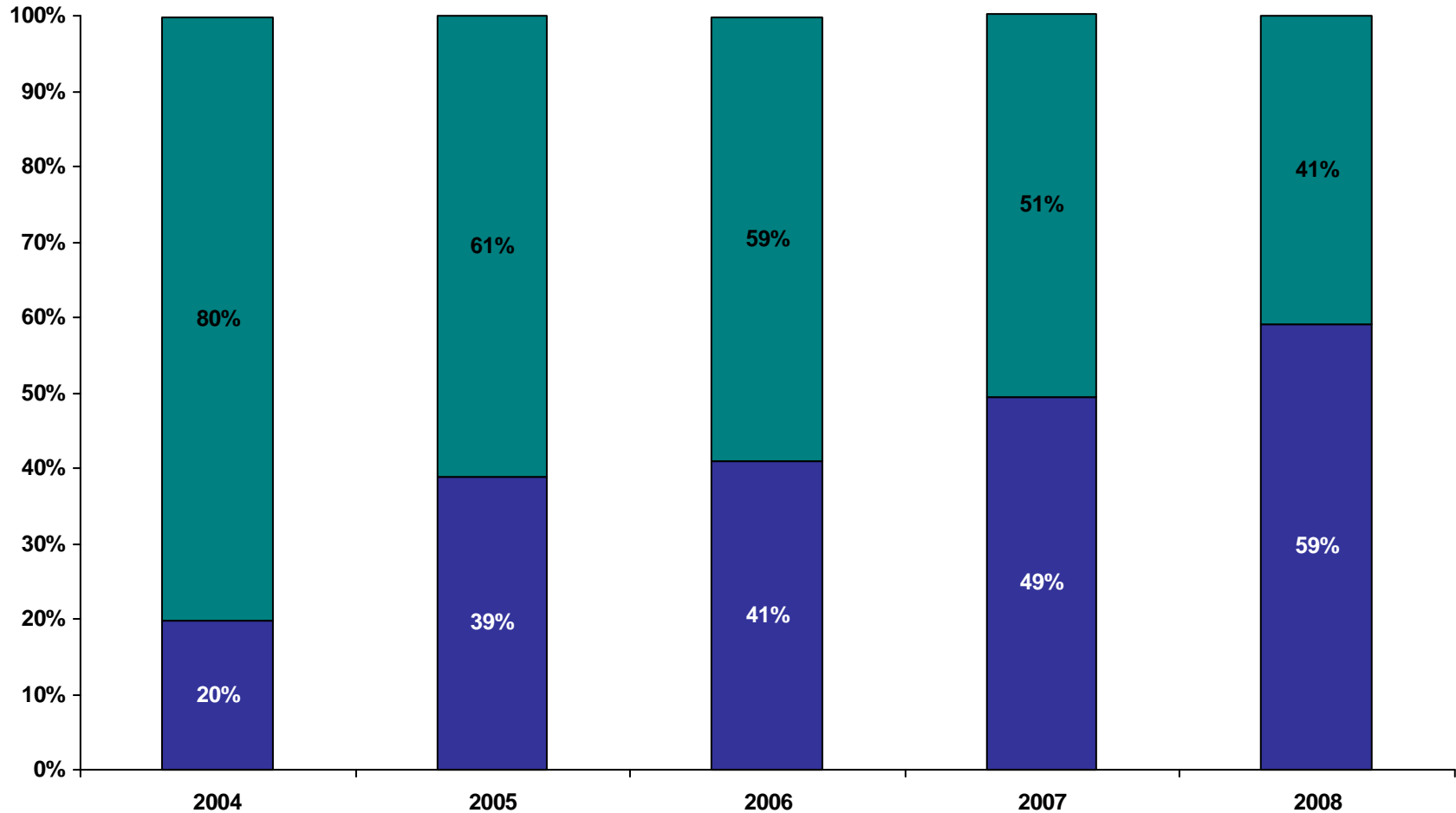
# Benefits of CVISN

## Electronic Screening Program Area (continued)

		Discounted at 4%	Discounted at 7%
Benefits	Crashes avoided	\$1,534,155,303	\$1,177,444,345
	Transit time savings	\$10,071,090,417	\$7,729,431,591
<b>Total Benefits</b>		<b>\$11,605,245,720</b>	<b>\$8,906,875,937</b>
Costs	One time start-up cost to states	\$543,368,309	\$543,368,309
	Replacement capital costs to states	\$654,581,236	\$450,195,560
	Increased operating costs to states	\$1,081,007,602	\$829,659,348
	Increased operating costs to carriers	\$2,184,682,658	\$1,717,354,342
	Increased OOS costs to carriers	\$742,787,900	\$570,080,103
<b>Total Costs</b>		<b>\$5,206,427,706</b>	<b>\$4,110,657,662</b>
Total (Net Present Value)		\$6,398,818,015	\$4,796,218,275
<b>Benefit/Cost Ratio</b>		<b>2.2</b>	<b>2.2</b>

# Benefits of CVISN

## Safety Information Exchange Program Area (continued)

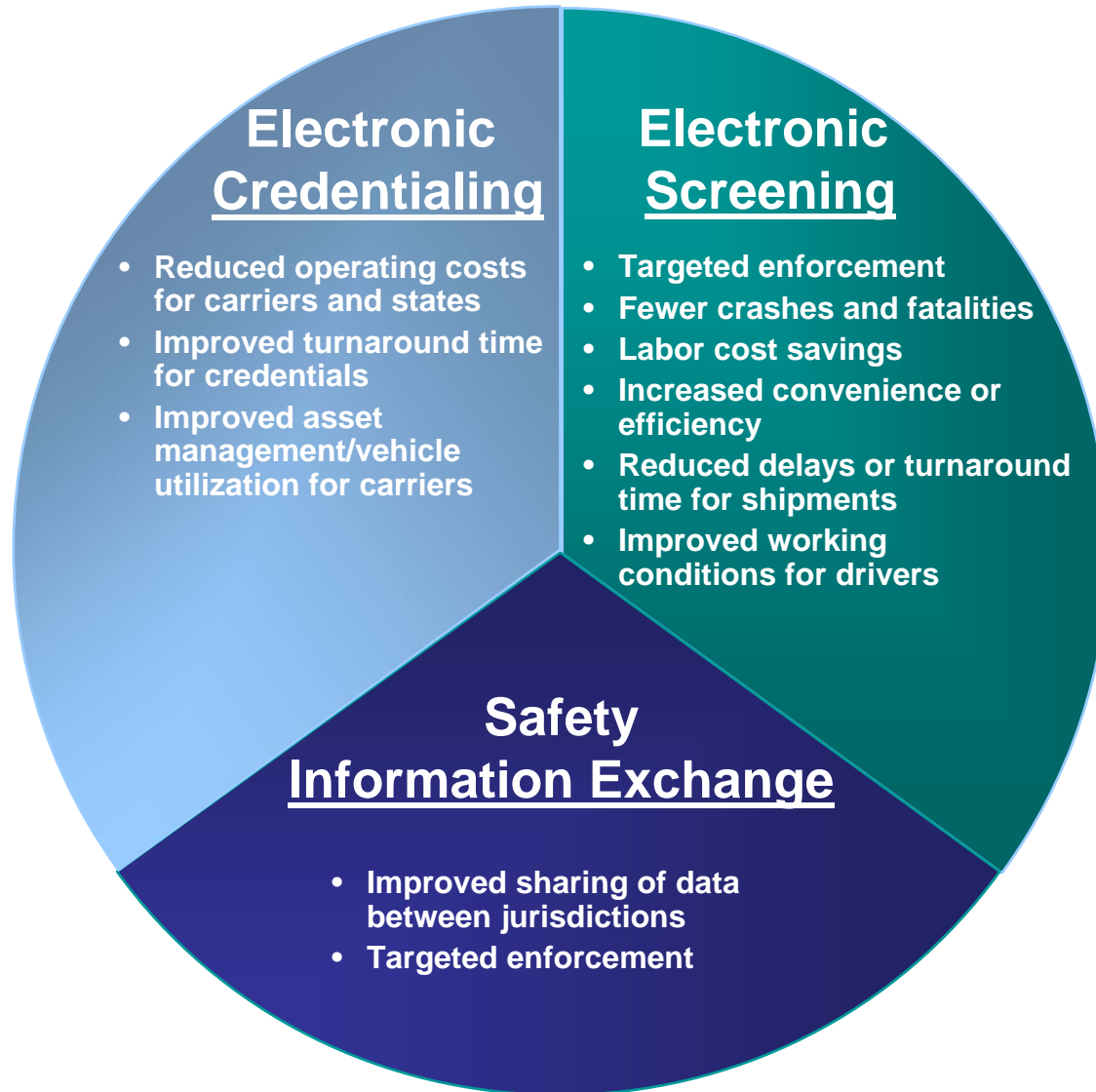


■ Percentage of IRP Registrations in States Not Sharing Data with SAFER  
■ Percentage of IRP Registrations in States Sharing Credential Data with SAFER

# Determining Benefits of the National CVISN Program

- *A Qualitative Business Case for CVISN, March 2006*
- *Economic Analysis and Business Case for Motor Carrier Support of CVISN, October 2007*
- *Draft Evaluation of the National CVISN Deployment Program, June 2008*

# Summary



# Contact Information

**Julie Lane**

**Federal Motor Carrier Safety Administration**

**Tel: (202) 385-2391**

**E-mail: [julie.lane@dot.gov](mailto:julie.lane@dot.gov)**

**Jeff Secrist**

**Federal Motor Carrier Safety Administration**

**Tel: (202) 385-2367**

**E-mail: [jeff.secrist@dot.gov](mailto:jeff.secrist@dot.gov)**